

ROSAHL

Instruction Manual

ELECTROLYTIC DEHUMIDIFYING ELEMENT

「 RD3・RD4 」

NOTICE

1. Please read this manual before you use a dehumidifying element and use it correctly.
2. The person who operates, manages and maintains the dehumidifying element must keep this manual.



RYOSAI TECHNICA CO., LTD.

1-1 Tsukaguchi-Honmachi 8-chome
Amagasaki, Hyogo Prefecture, 661-0001, Japan
Tel: +81-6-6497-9078 Fax: +81-6-6497-9082

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For proper usage

- | | |
|---|---|
| <p>● Supply DC (direct current) 3V to a dehumidifying element. <u>DO NOT reverse the polarity.</u>
Inverting the polarity will reverse dehumidification and humidification, which will cause leading to damage of the dehumidifying element.</p> | 
Prohibited |
| <p>● Check the installation direction carefully before installation.
Installing in the opposite direction will reverses dehumidification and humidification, which result in an adverse effect on the contents in the container.</p> | 
Prohibited |
| <p>● DO NOT expose the element directly to the weather.
Please cover the element with a cover or moisture-permeable sheet to prevent it from getting wet when using outdoors.</p> | 
Prohibited |
| <p>● DO NOT put pin or wire etc. into a dehumidifying element. It may cause an electric shock and the element may be damaged or deteriorate.</p> | 
Prohibited |
| <p>● <u>DO NOT use a silicon-based sealing agents</u> as they affect the airtightness of container
<small>They might degrade the performance of the dehumidifying element.</small></p> | 
Prohibited |
| <p>● <u>DO NOT use with vapor phase corrosion inhibitor</u> or insect repellent. DO NOT use in an environment with a lot of organic gas. They may degrade the performance of the dehumidifying element. The performance of an element may deteriorate.</p> | 
Prohibited |
| <p>● DO NOT attempt to disassemble, repair or modify the dehumidifying element. It may cause an electric shock and the performance deterioration, as this may damage it.</p> | 
Prohibited |

Installation Method and Location

- 1 It is preferable that the element is installed in the center of the inner side surface of the container with packings to ensure airtightness of the container.
- 2 Check the installation direction carefully before installation.
Installing in the opposite direction will reverse dehumidification and humidification, which result in an adverse effect on the contents in the container.
- 3 Make a square hole 12.5mm x 12.5mm and four M2 screw hole on the container on which you will install the dehumidifying element. (See Fig.1)
- 4 Attach a protective cover when necessary to prevent hands or objects from coming into contact with the dehumidifying / humidifying surface of the element.
In addition, when using outdoors, cover the element with a cover or moisture-permeable sheet to prevent it from getting wet.
- 5 Make a sealed moisture-impermeable container as much as possible to bring a high performance into the dehumidifying element.
- 6 Keep the moisture discharging side unsealed and well ventilated.

Precautions for Use

1. Regarding sealing agents

Sealing agents should not be silicon-based, as they affect the airtightness of the container.

(Silicon-based sealing agents generate oxime gas and siloxane gas during hardening, which quickly degrades the performance of the dehumidifying element.)

Recommended products: modified silicon caulk or acrylic caulk

Modified silicon caulk is mainly composed of polyurethane.

Consult us if using a sealing agent not specified above.

2. Regarding power supply

Strictly follow the following instructions about power supply to the element.

- (1) DO NOT reverse the polarity. Please check the indication of polarity for the product. (Attach a polarity indication LED on the outside if necessary.)

Inverting the polarity will reverse dehumidification and humidification, which may result in an adverse effect on the contents in the container and also will cause chemical reaction consuming the porous electrode at the cathode side and leading to damage of the element.

- (2) The dehumidifying element naturally causes a relatively large starting current when the power is turned on. Therefore, the specifications below are recommended for the power supply.

Table 1

Item	Model No.	RD3/RD4
Rated output voltage		3VDC
Rated output current		500mA
Overcurrent protection function (constant or fold-back current limiting)		Required
		Note: When fold-back current limiting is employed, the dehumidifying element may not function correctly.
Overvoltage protection function		Required
Output voltage variation		0.1V or less
Ripple noise		0.2V or less
Others		In accordance with the specifications of commercially available power supply

(3) Use a dedicated power source for each dehumidifying element

(When multiple dehumidifying elements are connected in series or parallel, the breakage of one element may cause all other elements to be disabled.)

(4) The size of an electric wire is from AWG28 to AWG20.

Outline of a dehumidifying element

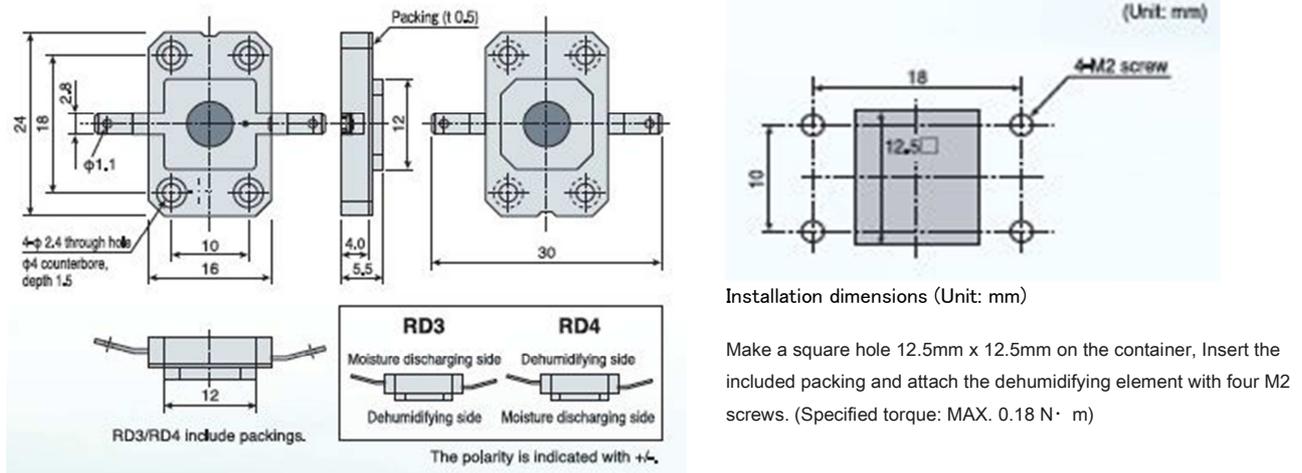


Fig.1

Confirmation items before using

Please confirm the following items surely before turning on the power.

1. Is the power supply DC3V?
2. Is the polarity of an element correct?
3. Does not a dehumidifying element get wet?

Usage

1. Please supply DC3V to a dehumidifying element.
2. Please adjust a supply voltage in the range of DC2.95 – 3.05V between each terminals after 15–20 minutes turning on the power at the first time of installation.
(The dehumidifying element naturally causes a relatively large starting current when the power is turned on. but this is not abnormal.)

Specifications

Table 2

Item	Model No.	RD3/RD4* ⁸
Dehumidifying capacity (mg/day) * ¹		84
Applicable volume (cc) * ²		Up to 2000
Element terminal voltage (V)		3VDC
Power consumption (mW) * ³		80
Dimensions(height x width x depth) (mm) * ⁴		24 x 30 x 5.5
Weight (g)		1.9
Dimensions of moisture discharging hole (mm) * ⁵		12.5 x 12.5
Operating temperature (°C)		-10 to 50
Element connecting terminal type		Soldered type* ⁶ or Insertion type* ⁷

Notes

- *1 The initial value at the temperature of 30°C and humidity 60%RH.
(The dehumidifying capacity will degrade during use. How much it degrades depends on the operating environment and conditions. If any signs of abnormality are seen, early replacement is recommended.)
- *2 The applicable volume is for a sealed, moisture-impermeable container, and may vary depending on the material of the container, state of sealing and required humidity.
- *3 The annual average power consumption under average conditions in Japan. (20°C 60%RH)
- *4 See Fig. 1.
- *5 See Fig. 1.
- *6 When you solder to RD3 or RD4, twist an electric wire around an electrode and solder within 360°C, 5 seconds using the soldering iron.
- *7 For an insertion type terminal, use a STO-01T-110N (JST, Inc.) flat connecting terminal or equivalent.
- *8 When dehumidifying the inside of a container, attach RD3 from the outside or RD4 from the inside.